

CHRISTMAS CONTEST

2009, December 26th,
16:00 - 17:40 GMT

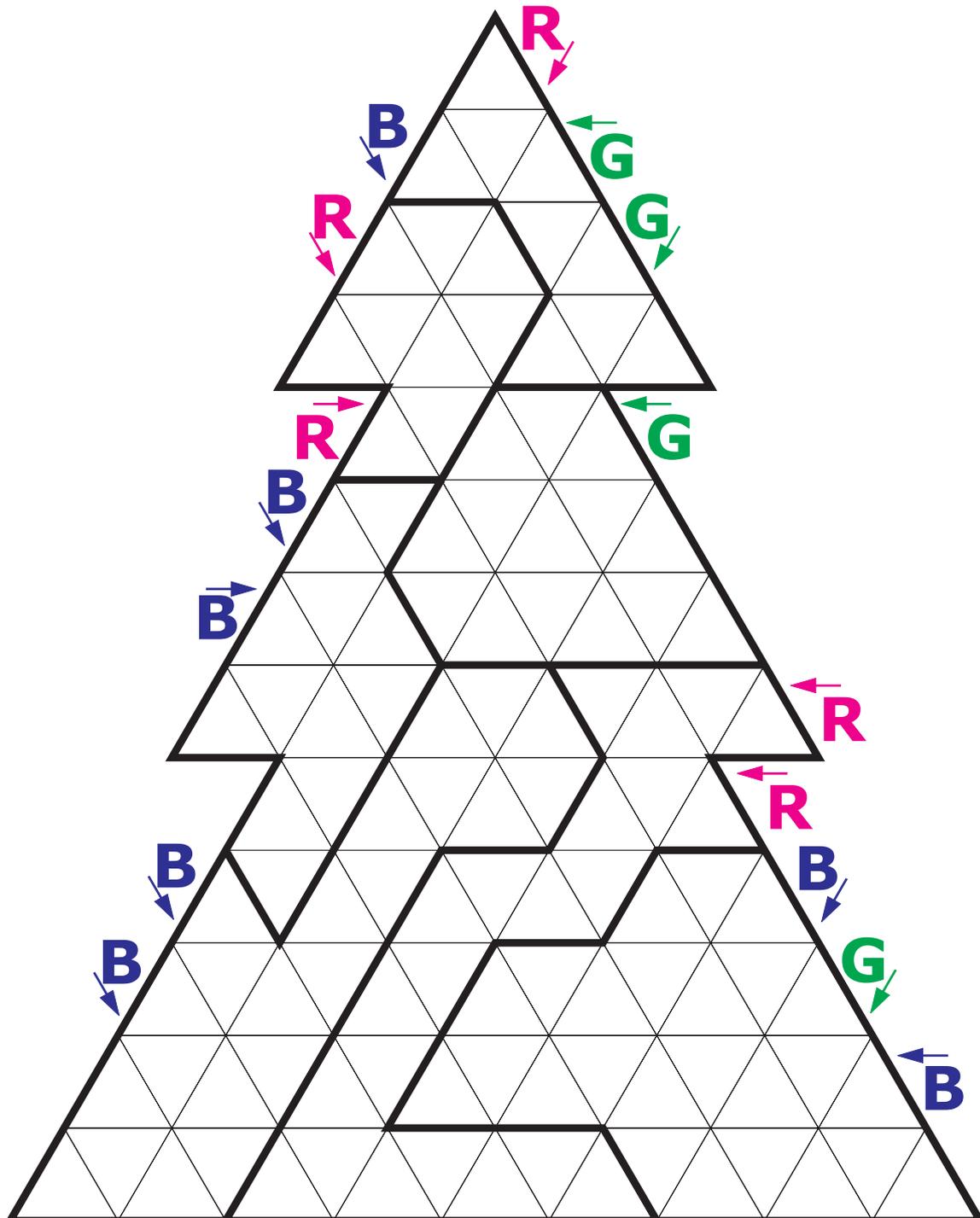
Answers should be sent via submission page <http://diogen.h1.ru/cgi-bin/contest/contest.pl?id=34>.

1. MERRY CHRISTMAS

90 POINTS

Decorate the Christmas Tree with lamps of three colours - paint some triangles with red, green, blue colours so that the painted triangles do not touch each other by a side. There should be exactly seven triangles of each colour. Triangles with the same colour cannot be in one row (of any of three directions) or in one outlined area. Letters outside show the colour of the first visible painted triangle in the corresponding direction.

Answer format: write the order of painted cells for each row from top to bottom. Use *R* for red cells, *G* from green cells and *B* for blue cells.



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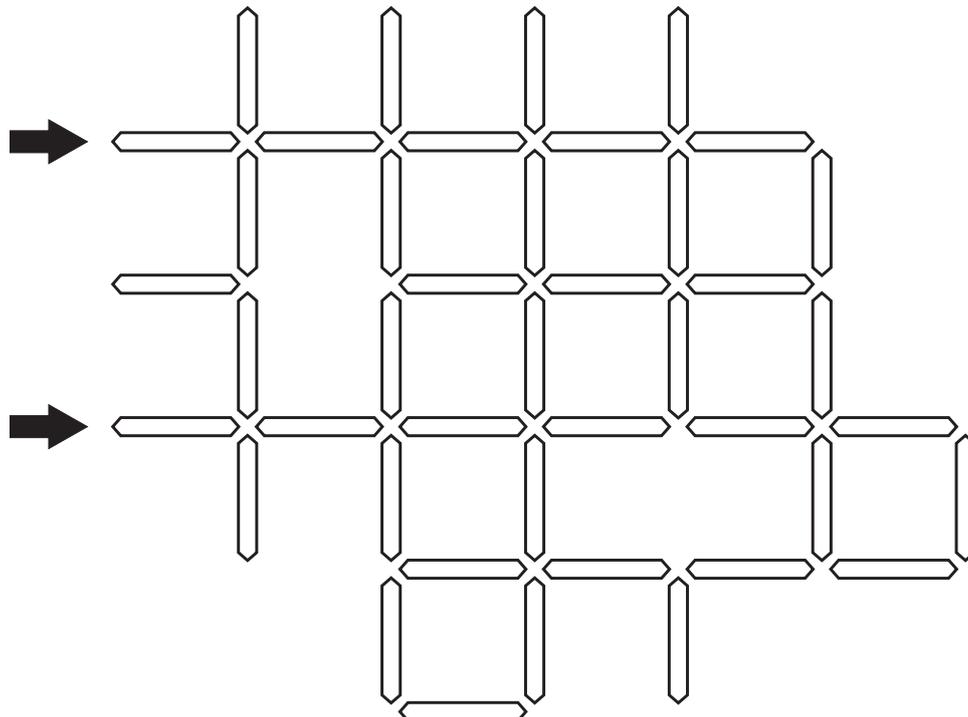
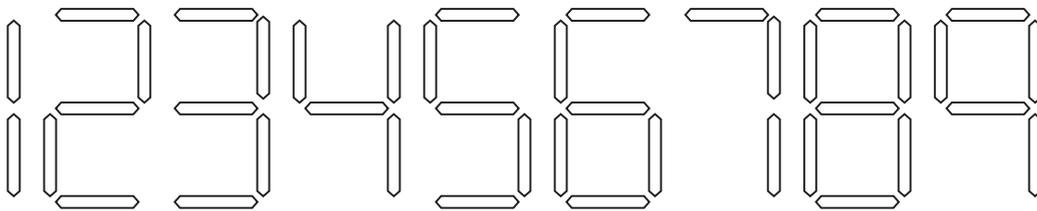
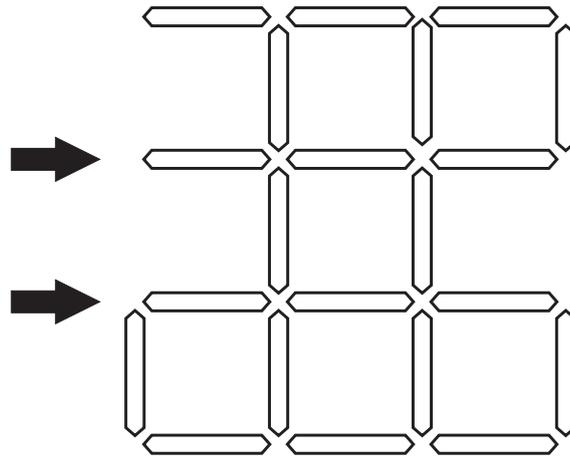
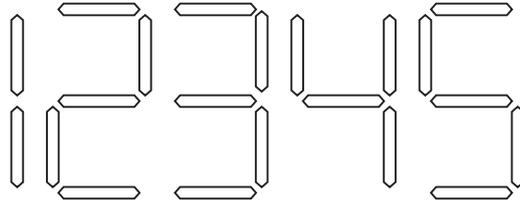
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2-3. DIGITAL MESS

30 POINTS (10 + 20)

Given digits are located in the grid without overlapping each other. Find the position of all digits. Digits may be rotated but not mirrored.

Answer format: write the content of marked rows using corresponding digits for all tiles in the row.



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4-8. MATCH MAKER

250 POINTS (50 x 5)

Your goal is to solve five puzzles. You're given five different grids and six different instructions. Match the grids with the instructions and solve the puzzles. One instruction will be unused. Any grid may have several solutions for any type, but the five puzzles can all be solved only in one way.

A. EASY AS BATTLESHIPS

Place the given battleships fleet (one 4-cells, two 3-cells, three 2-cells and four 1-cells) into the grid. The ships may not touch not even diagonally. The numbers outside the grid show the size of the first visible ship in the corresponding direction. Marked cells cannot be occupied by the ships.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use digits corresponding to the ship size and E for empty cells.*

B. CORAL

Paint some squares black to form a coral. The coral is a connected area without any holes. Coral could not touch itself even by a corner. There cannot be painted squares 2x2. The numbers outside the grid show the length of the first painted block in the corresponding row. Marked cells belong to the coral.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use B for occupied cells and E for empty cells.*

C. SKYSCRAPERS

Put in digits 1-4 into the grid so that each digit appears exactly once in each row and in each column. Each digit inside the grid represents a building with the height of the digit itself. Numbers outside the grid indicate the number of buildings that can be seen by an observer looking into the grid in the corresponding direction, taking into account that higher buildings block the view of lower buildings from the observer. Marked cells cannot contain digits.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use E for empty cells.*

D. STRIPED SNAKE

Draw a snake (a path with one square width which cannot touch itself even diagonally) in the grid. Odd cells of the snake are black, even are white. The numbers at the left and on the bottom of the grid show the number of black cells in the corresponding row, numbers at the right and on the top of the grid show the number of white cells. Head and tail of the snake are marked.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use B black cells of the snake, W for white cells and E for empty cells.*

E. MAGNETS

Divide the grid into 1x2 rectangles. Some of them are magnetic (they have a positive (+) and a negative (-) halves). Halves containing the same sign cannot be adjacent. The numbers at the left and on the bottom of the grid indicate the number of positive magnetic halves in the corresponding row, and the numbers at the right and on the top of the grid indicate the number of negative magnetic halves in the corresponding row. Show the positions of the magnetic plates, indicating the symbols in each one of the halves. Marked cells belong to non-magnetic plates.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use signs +, - for the magnetic halves and E for nonmagnetic.*

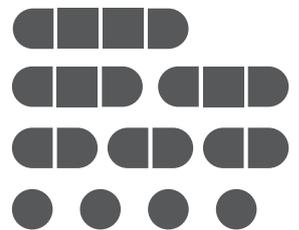
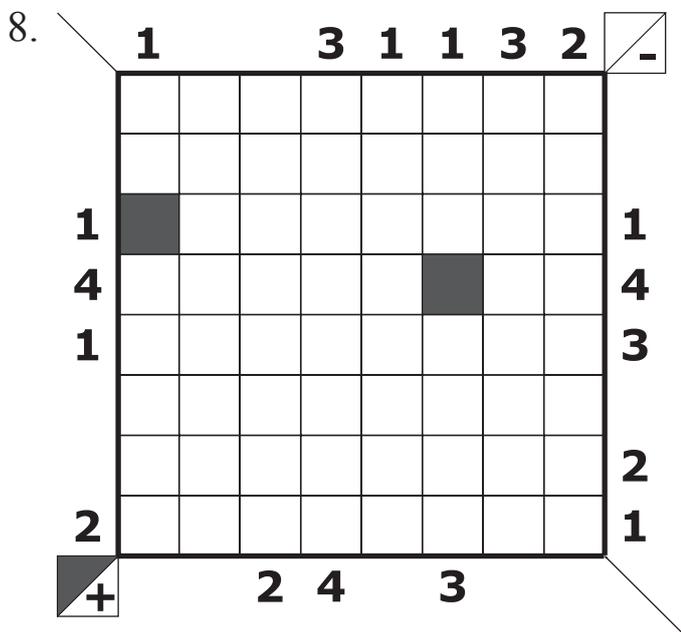
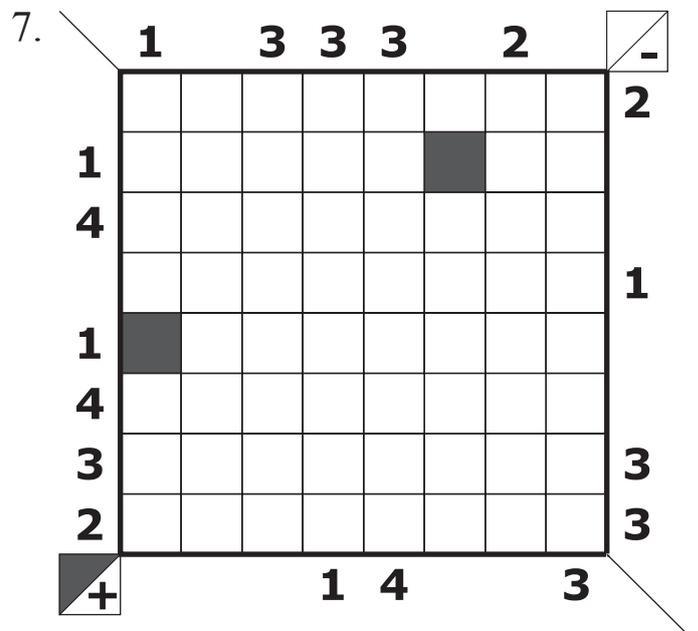
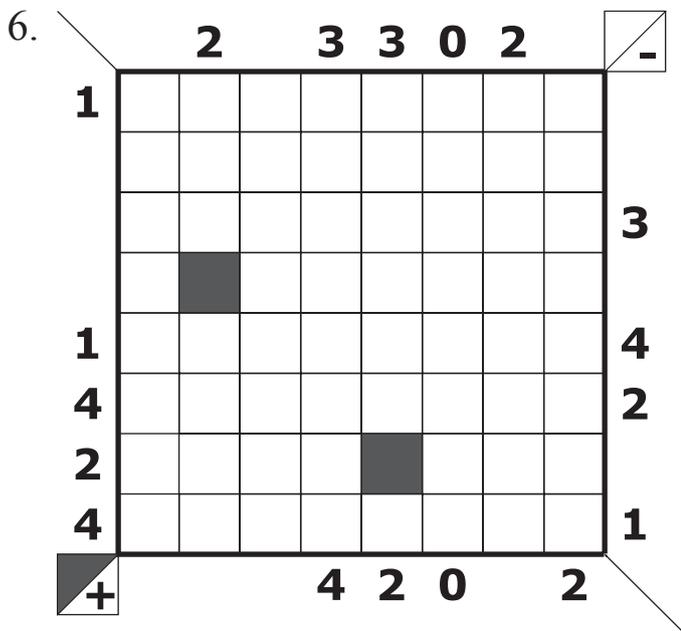
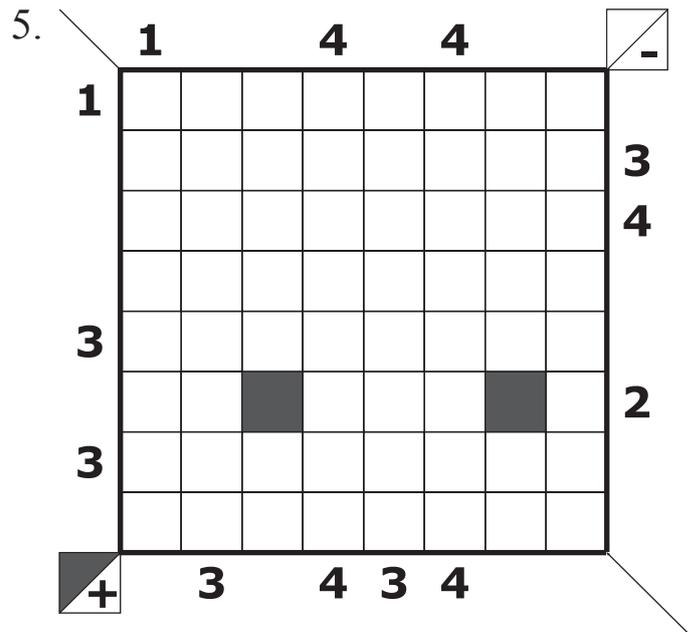
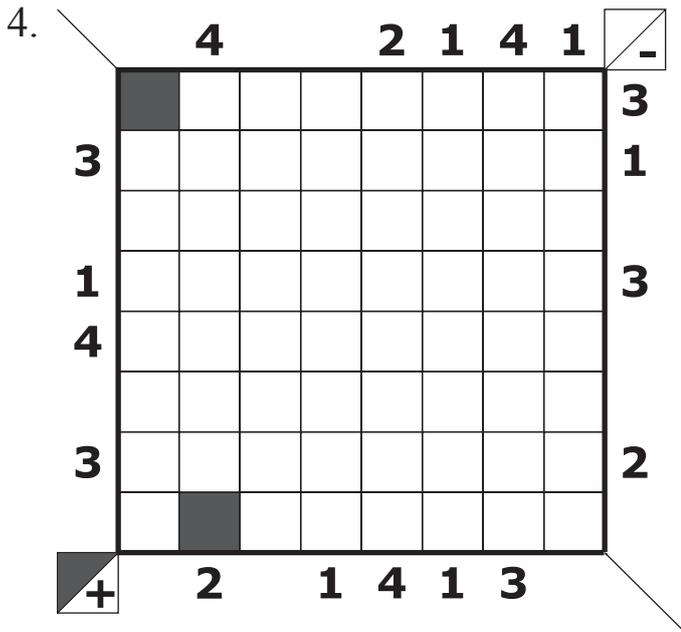
F. TWO AREAS

Divide the grid into two areas - black and white. Each area are connected and do not contain 2x2 squares. The numbers at the left and on the bottom show the number of black cells in corresponding row. The numbers at the right and on the top show the number of white cells. Marked cells are black.

Answer format: *write the content of the diagonal from the bottom left to the top right corner. Use B for black cells, W the white cells.*

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	4	5	6	7	8
A. Easy as Battleships					
B. Coral					
C. Skyscrapers					
D. Striped Snake					
E. Magnets					
F. Two areas					

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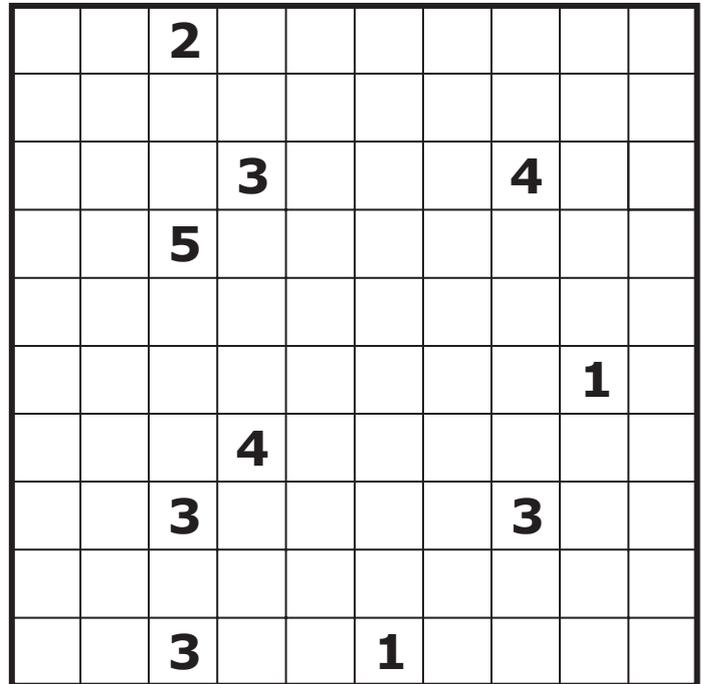
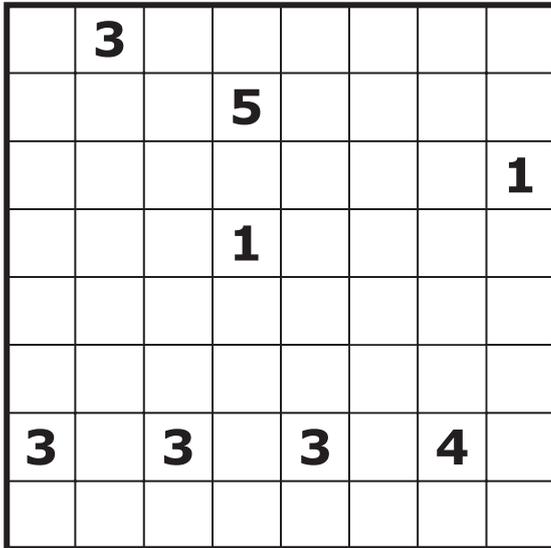
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9-10. CRUISE

60 POINTS (20 + 40)

Place some islands into the grid, Islands can touch each other only diagonally. Each island contains at least one digit which shows the size of the island. Draw single closed path going through all empty cells. Path goes horizontally or vertically through the centres of the cells and cannot touch or cross itself.

Answer format: write the number of turns of the path.

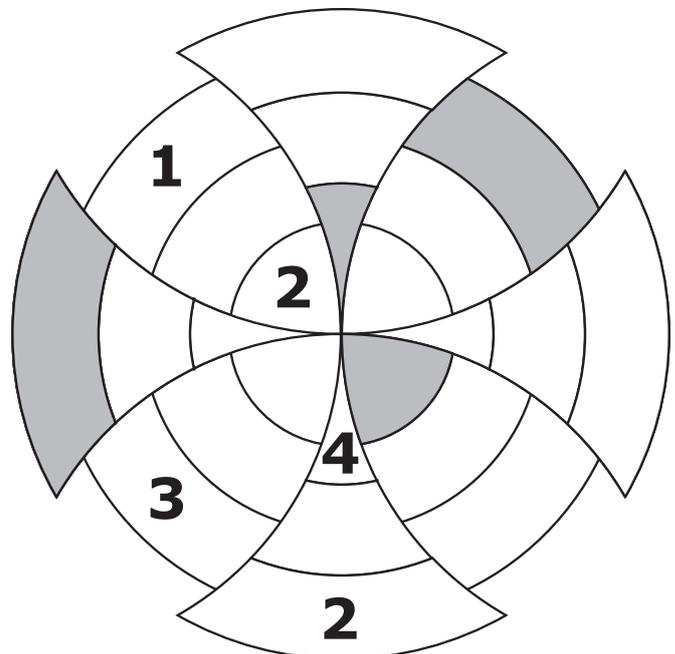
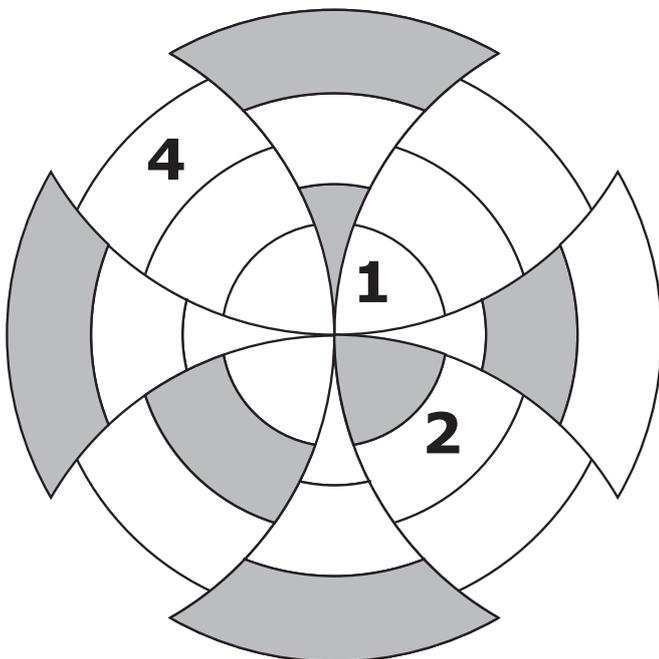


11-12. HEDEF

60 POINTS (30 + 30)

Place a digit 1 to 6 in each layer of the four groups of six layers. Each group of six layers consists of three couples of layers symmetrical with respect to the center point of the figure and each layer within a group should contain exactly one of each digit 1 to 6. If a number inside a layer is greater than all of the numbers inside its neighbouring layers sharing sides, that area should be shaded; and all shaded layers are given. Neighbouring layers sharing sides cannot contain the same numbers. Identical (same size and shape) layers cannot contain the same numbers.

Answer format: write the content of horizontal group from left to right.



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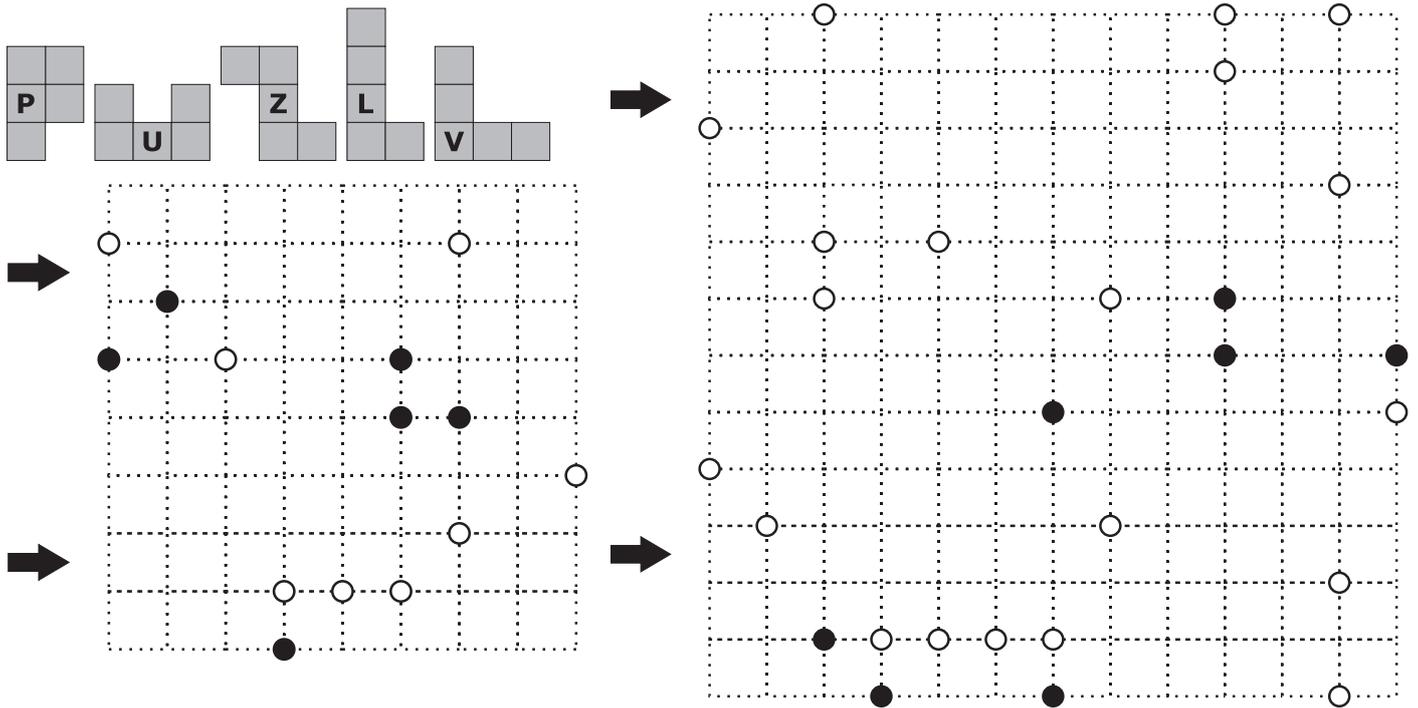
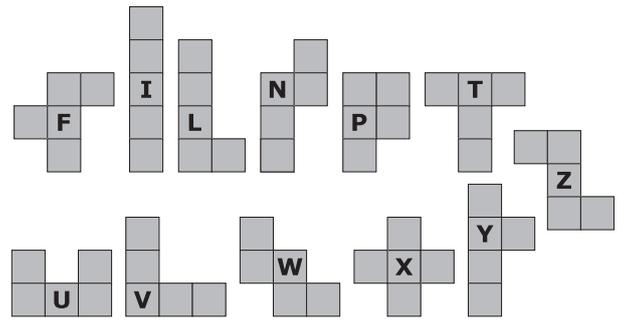
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16-17. PENTOMASYU

70 POINTS (20 + 50)

Draw some closed loops going at the cells edges to form the given set of different pentomino pieces. Loops cannot touch or intersect. The path must turn at every black circle, but can not turn immediately before or after. And the path can not turn at any white, but must turn immediately before and/or after. All circles should be used. Pentomino may be rotated and/or mirrored.

Answer format: write the content of marked rows using letters for pentominoes and "-" for outside cells.

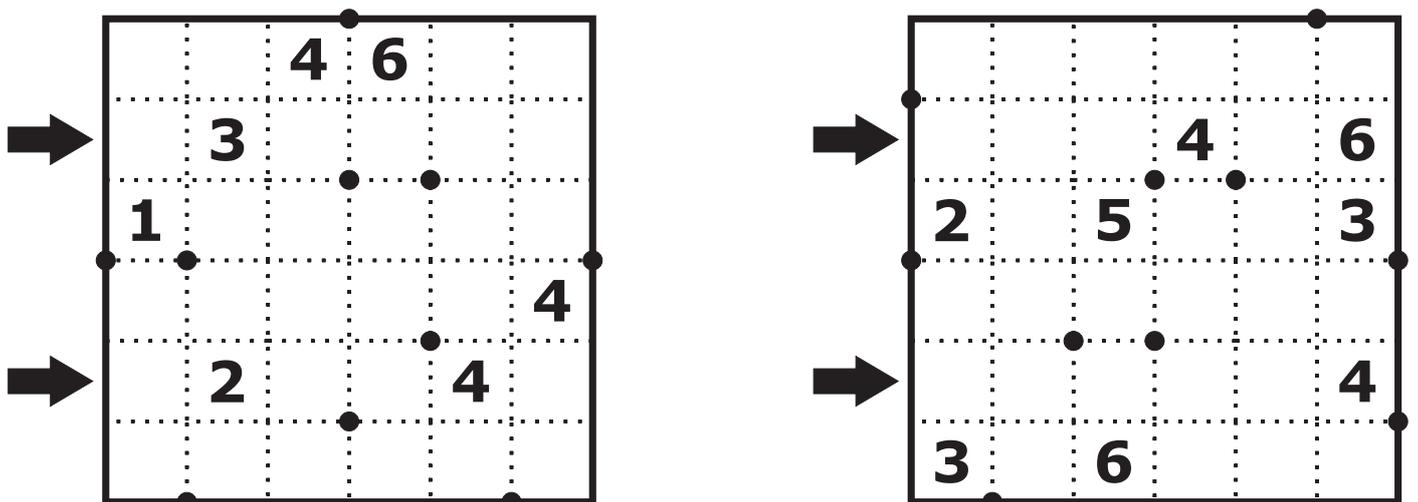


18-19. TRIPOD SUDOKU

70 POINTS (30 + 40)

Fill the grid with digits 1-6 and divide the grid into some regions, so that each digit appears exactly once in every row, column and region. All points where three lines meet are given. There are no points where four lines meet.

Answer format: write the content of marked rows.



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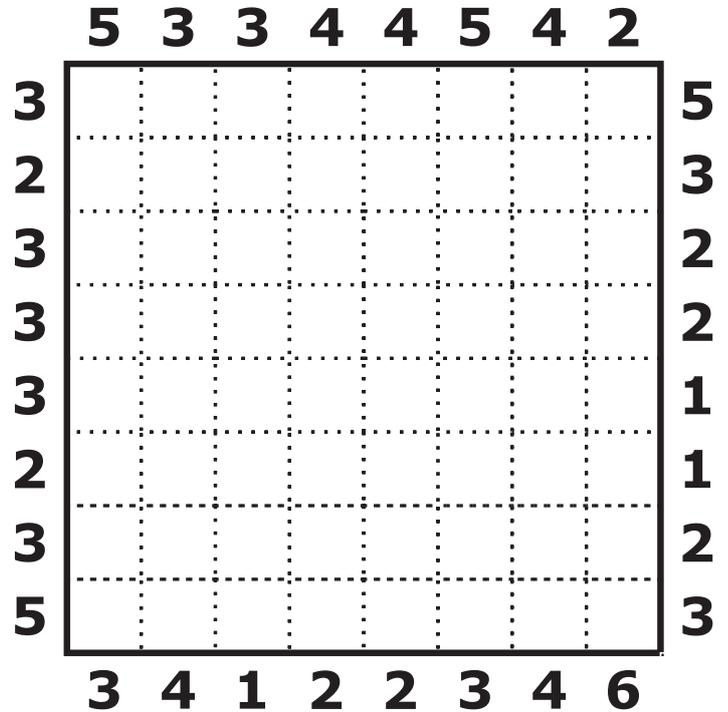
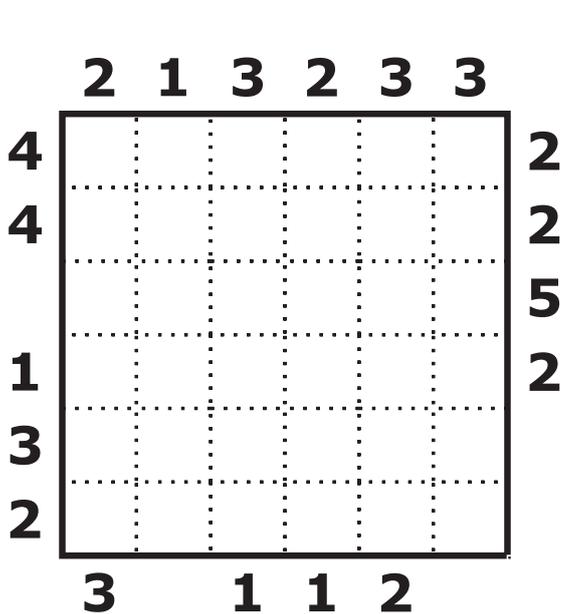
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20-21. COUNTRIES

90 POINTS (30 + 60)

Divide the grid into areas. Digits outside the grid show the quantity of cells belonging to the area that touches the border in corresponding place. Each area must touch the border of the grid.

Answer format: write the areas of all countries in increasing order.

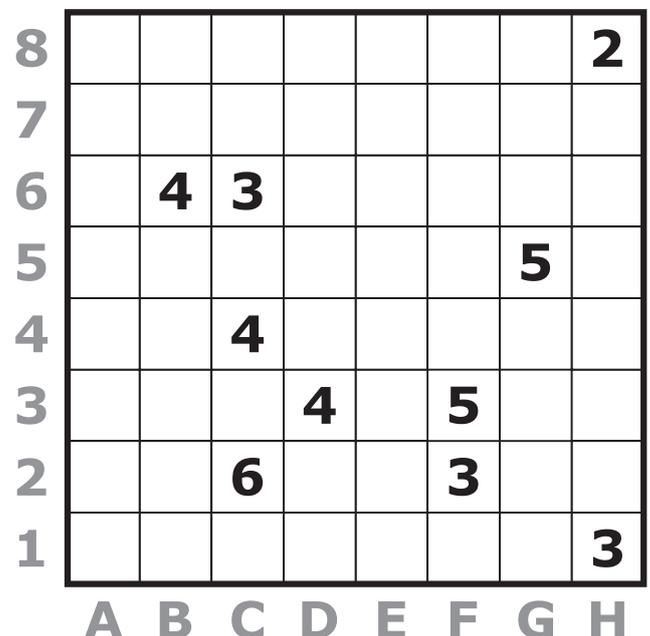
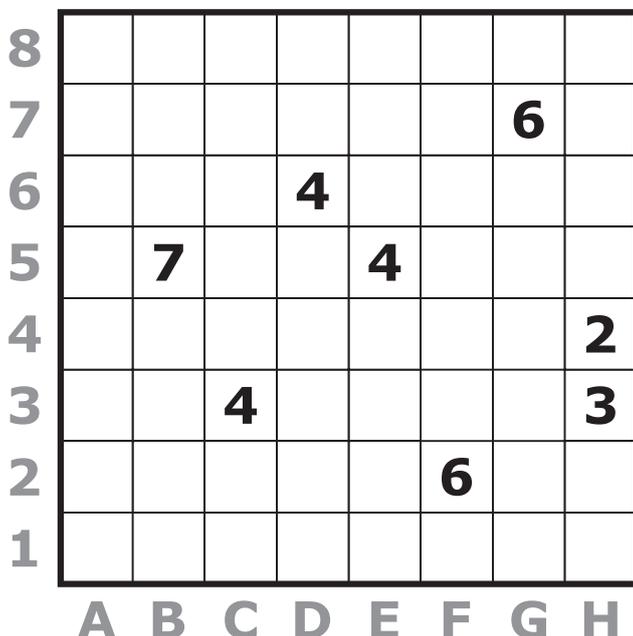
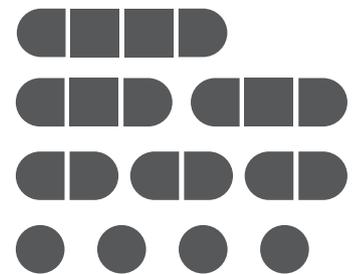


22-23. BATTLE SNAKE

40 POINTS (20 + 20)

Draw a snake (a path with one square width which cannot touch itself even diagonally) in the grid. Digits show the number of neighbouring cells occupied by the snake. All remaining cells (without snake and digits) should form the standard battleships set (one 4-cells, two 3-cells, three 2-cells and four 1-cells). The ships cannot touch each other even diagonally.

Answer format: write the coordinates of 1-cell ships.



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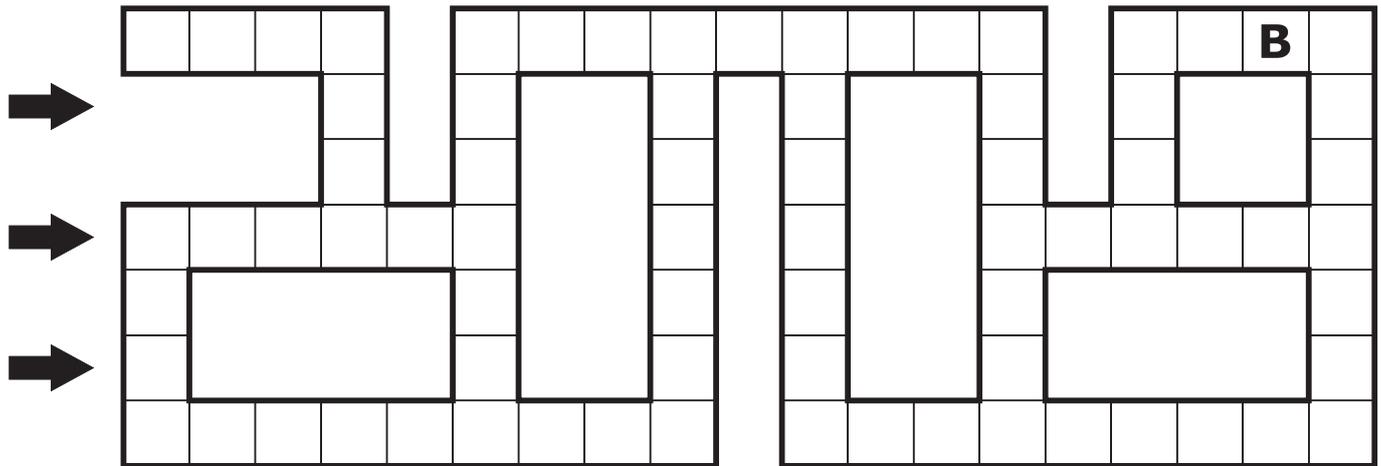
24-25. CROSSWORD

50 POINTS (40 + 30)

Place all the given words into the crossword grid. Words should be read from top to bottom or from left to right.

Answer format: write the content of marked rows. Ignore spaces.

AABA	BABB	AAABABA	BBBABBA
AABB	BBBA	AABABBA	AABABBBAA
ABAA	AABABA	ABAABAB	ABABAAABB
	ABAAAA	BBABAAB	ABBBABAAB



ABAC	BBAC	CABACA	CABACCA
ABBA	CABA	BACAABA	CBABAAB
BACA	CAAB	BACABAB	CBABACAB
		BCAABAB	ABABAABAB

